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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,211	06/21/2002	Lin-Kai Bu	HMOP0003USA	2831

27765 7590 05/03/2004

NAIPO (NORTH AMERICA INTERNATIONAL PATENT OFFICE)
P.O. BOX 506
MERRIFIELD, VA 22116

EXAMINER	
DINH, DUC Q	

ART UNIT	PAPER NUMBER
2674	5

DATE MAILED: 05/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/064,211	BU, LIN-KAI	
	Examiner	Art Unit	
	DUC Q DINH	2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 June 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *7-17* is/are allowed.

6)☒ Claim(s) *1-6 and 18-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 June 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 18-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 18-20 cites the limitations

"driving the first pixel according to the first display data; comparing the polarity statuses corresponding to the first and second display data; driving the second pixel by the precharge circuit and the class-A output buffer if the polarity statuses are the same, in accordance with the second display data; and

driving the second pixel by the class-A output buffer if the polarity statuses are different, in accordance with the second display data (claim 18); or

"driving the first pixel to a voltage level corresponding to the first display data by means of the first class-A output buffer; comparing the polarity statuses corresponding to the first and second display data;

precharging the second pixel to a predetermined voltage level and then driving the second pixel to a voltage level corresponding to the second display data by means of the first class-A output buffer if the polarity statuses are the same; and

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 18-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 18-20 cites the limitations

"driving the first pixel according to the first display data; comparing the polarity statuses corresponding to the first and second display data; driving the second pixel by the precharge circuit and the class-A output buffer if the polarity statuses are the same, in accordance with the second display data; and

driving the second pixel by the class-A output buffer if the polarity statuses are different, in accordance with the second display data (claim 18); or

"driving the first pixel to a voltage level corresponding to the first display data by means of the first class-A output buffer; comparing the polarity statuses corresponding to the first and second display data;

precharging the second pixel to a predetermined voltage level and then driving the second pixel to a voltage level corresponding to the second display data by means of the first class-A output buffer if the polarity statuses are the same; and

driving the second pixel to a voltage level corresponding to the second display data by means of the second class-A output buffer if the polarity statuses are different" (claim 19).

Although the specification does mention "the detector 61 is used for determined what kind of driving methods is adopted by comparing polarities of two adjacent pixels located in the same column but different rows and the controller is capable of controlling the positive buffer circuit 70 and the negative buffer to drive the pixels correctly" [0032] and "the negative buffer circuit 72 has a precharge circuit 84 for providing a predetermined negative level Vb to a data line, and an output buffer 85 for driving a voltage level from the predetermined negative level Vb to a target negative voltage. It is noteworthy that the precharge circuits 82, 84 are source followers in the preferred embodiment for providing voltage level Va and Vb, and the output buffers 83, 85 are class-A operational amplifiers for individually outputting positive voltages and negative voltages to drive pixels [0033]. There is insufficient support for the quoted limitations above and the specification is not enabling how one of ordinary skill would actually to make and/or use the invention.

Claim Objections

3. Claim 1 is objected to because of the following informalities: line 10, "npositive buffer circuit" should read "positive buffer circuit". Appropriate correction is required.

Allowable Subject Matter

4. Claims 1-6 would be allowable if rewritten or amended to overcome the informalities objection above.

The following is a statement of reasons for the indication of allowable subject matter: non of the recited art teaches or suggests:

"using the controller to control either the positive buffer circuit or the negative buffer circuit for driving two adjacent pixels, which are located in the same column but different rows on the LCD panel corresponding to the two successive triggers of the horizontal synchronization signal, with voltages of the same polarity when the detector detects that states of the polarity signal at two successive triggers of the horizontal synchronization signal are the same so that the positive buffer circuit continuously drives the pixels with the positive voltage and the negative buffer circuit continuously drives the pixels with the negative voltage; and

using the controller to control the positive buffer circuit and the negative buffer circuit for driving two adjacent pixels, which are located in the same column but different rows on the LCD panel corresponding to two successive triggers of the horizontal synchronization signal, with voltages of opposite polarities when the detector detects that two states of the polarity signal at two successive triggers of the horizontal synchronization signal differ.

5. Claims 7-17 are allowed.

6. The following is an examiner's statement of reasons for allowance: none of the cited arts teaches or suggests:

"a controller connected to the detector, the positive buffer circuit, and the negative buffer circuit for controlling operation of the positive buffer circuit and the negative buffer circuit according to an output of the detector;

wherein the controller controls either the positive buffer circuit or the negative buffer circuit for driving two adjacent pixels, which are located in the same column but different rows on the LCD panel corresponding to the two successive triggers of the horizontal synchronization signal, with voltages of the same polarity when the detector detects that states of the polarity signal at two successive triggers of the horizontal synchronization signal are the same so that the positive buffer circuit continuously drives the pixels with the positive voltage and the negative buffer circuit continuously drives the pixels with the negative voltage, and the controller controls the positive buffer circuit and the negative buffer circuit for driving two adjacent pixels, which are located in the same column but different rows on the LCD panel corresponding to two successive triggers of the horizontal synchronization signal, with voltages of opposite polarities when the detector detects that two states of the polarity signal at two successive triggers of the horizontal synchronization signal differ. (claim 7) or

"a detector for receiving a horizontal synchronization signal and a polarity signal, the detector comprising: two latch circuits for holding the corresponding states of the polarity signal at two successive triggers of the horizontal synchronization signal; and a logic circuit for comparing two states of the polarity signal at two successive triggers of the horizontal synchronization signal; and

a controller connected to the detector, the positive buffer circuit, and the negative output buffer for controlling operation of the positive buffer circuit and the negative buffer circuit according to an output of the detector;

wherein the controller controls either the positive buffer circuit or the negative buffer circuit for driving two adjacent pixels, which are located in the same column but different rows on the LCD panel corresponding to the two successive triggers of the horizontal synchronization signal, with voltages of the same polarity when the detector detects that states of the polarity signal at two successive triggers of the horizontal synchronization signal are the same so that the positive buffer circuit continuously drives the pixels with the positive voltage and the negative buffer circuit continuously drives the pixels with the negative voltage, and

the controller controls the positive buffer circuit and the negative buffer circuit for driving two adjacent pixels, which are located in the same column but different rows on the LCD panel corresponding to two successive triggers of the horizontal synchronization signal, with voltages of opposite polarities when the detector detects that two states of the polarity signal at two successive triggers of the horizontal synchronization signal differ". (Claim 13)

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See Form PTO 892.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **DUC Q DINH** whose telephone number is **(703) 306-5412** The examiner can normally be reached on Mon-Fri from 8:00.AM-4:00.PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **RICHARD A HJERPE** can be reached on **(703) 305-4709**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivery response should be brought to: Crystal Park II, 2121 Crystal Drive, Arlington, Va Sixth Floor (Receptionist)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

DUC Q DINH
Examiner
Art Unit 2674

REGINA LIANG
PRIMARY EXAMINER

DQD
April 29, 2004